

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
22 July 2004 (22.07.2004)

PCT

(10) International Publication Number  
**WO 2004/061147 A1**

(51) International Patent Classification<sup>7</sup>: **C22F 1/04**,  
F28F 21/08

(21) International Application Number:  
PCT/JP2003/016921

(22) International Filing Date:  
26 December 2003 (26.12.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
2002-380756 27 December 2002 (27.12.2002) JP  
60/440,628 17 January 2003 (17.01.2003) US

(71) Applicant (for all designated States except US): **SHOWA DENKO K.K.** [JP/JP]; 13-9, Shiba Daimon 1-chome, Minato-ku, Tokyo 105-8518 (JP).

(72) Inventor; and

(75) Inventor/Applicant (for US only): **TAKAHASHI, Kazuyuki** [JP/JP]; c/o SHOWA DENKO K.K., OYAMA REGIONAL OFFICE, 480, Inuzuka 1-chome, Oyama-shi, Tochigi 323-8678 (JP).

(74) Agents: **HIBI, Norihiko** et al.; c/o KISHIMOTO & CO., 3rd Floor, Inaba Building, 13-18, Nishishinsaibashi 1-chome, Chuo-ku, Osaka-shi, Osaka 542-0086 (JP).

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

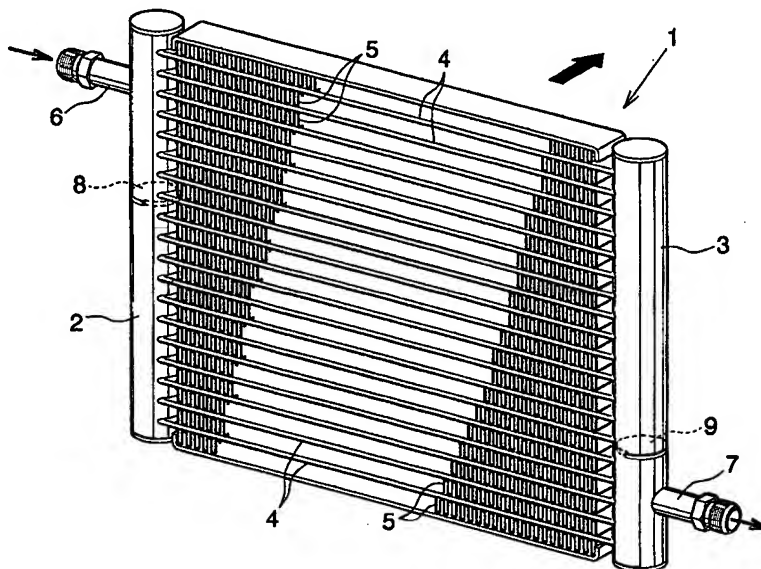
(84) Designated States (*regional*): ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: ALUMINUM PIPE AND PROCESS FOR PRODUCING SAME



(57) Abstract: An inlet pipe 6 and an outlet pipe 7 for use in condensers are made from an alloy containing 0.90 to 1.50 mass % of Mn, and the balance Al and inevitable impurities. The inlet pipe 6 and the outlet pipe have an electrical conductivity of 30 to 43% IACS. The inlet pipe 6 and an outlet pipe 7 are each produced from a pipe blank made from an alloy containing 0.90 to 1.50 mass % of Mn, and the balance Al and inevitable impurities, by holding the pipe blank heated at 550 to 600 C in the atmosphere or in an inert gas atmosphere for 10 to 600 minutes and thereafter cooling the pipe blank. The inlet pipe 6 and the outlet pipe 7 can be produced easily at a low cost and have satisfactory resistance to pitting corrosion.